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ABSTRACT

The purpose of this study was to determine if an organizer improved the understanding and retention of what was read, and, if so, to determine if the placement of the organizer significantly affected the resulting performance. The organizer was a 125-word paragraph which provided the reader with a generalized overview of the reading material and focused on conceptual relationships. The subjects were 160 full-time community college freshmen. Four treatment groups were formed: (1) the organizer first, then a reading passage, (2) reading passage first, then the organizer, (3) the organizer first, then the reading passage, and the organizer again, and (4) only the reading passage. No time limit was imposed, and all subjects had the same reading passage. Immediately following the reading the subjects were given a twenty-question comprehension test which tested recall of facts, main ideas, and inferences. Based on the findings, it appeared that the use of an organizer of the type employed in this study would be beneficial to community college readers in terms of increased comprehension. The findings also indicated that placing the organizer after the passage tends to result in greater comprehension. (WR)

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The Effect of "Organizers" on Reading Comprehension of Community College Freshmen

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According to Fisher (1967) "... it is common knowledge that as many as one child in four in the secondary school population experiences difficulty in understanding his reading assignments." In today's society, with its emphasis on post-high school education, many of those students with reading difficulties are attending colleges, particularly the "open-door" community and junior colleges. While teacher knowledge of these existing difficulties in understanding is relatively common, little has been done by reading specialists at the community college level

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to determine which techniques or approaches to the problem are likely to be most beneficial to students in terms of improved understanding of what they read.

Review of Related Literature

This review of the literature has been limited to those studies dealing with the theoretical and practical application of the organizer as it relates to reading comprehension.

Ausubel (1968) described organizers as being maximally clear and stable materials which are appropriately inclusive and relevant, and which are presented at a higher level of abstraction, generality, and inclusiveness than the material to which they are related. In less complex language, the organizer is a deliberately prepared set of ideas, related to material that is to be studied, which is intended to insure that relevant anchoring ideas will be available to enhance comprehension of the passage.

Studies With Organizers. There have been several studies done to test the hypothesis that use of an organizer results in improved reading comprehension scores. In a study done with college students, Ausubel and Fitzgerald (1960) used a 500 word organizer over a 2500 word learning passage on the properties of steel with an experimental group. A control group using the same learning

passage had significantly lower scores on a test given three days after the passage was read than the experimental group had.

Rothkopf (1966) studied paid university volunteers who all read a 5,200 word prose passage; four treatment groups received organizers of various types and were compared with a control group which had no organizer. Results showed all four treatment groups did significantly better on a comprehension test than the control group did.

Bauman, Glass, and Harrington (1969) reported three studies on use of organizers with college students as subjects. Subjects were randomly grouped, with one group having an advanced organizer, one a post-organizer, and one group serving as a control. Following the reading of a prose passage, a common test of reading comprehension was administered. Results showed the organizer groups had significantly higher scores than the control group. This first study was replicated twice, once with different subjects, and once with different materials. Results remained essentially the same.

Frase (1967) studied college students who read a passage from a psychology book. Two experimental groups received organizers, while a control group did not. Results indicated that the organizer, particularly the post-organizer, produced greater retention on a comprehension test than the control group showed.

In conclusion of this review, it appears that these findings all support the use of the organizer as a means of improving comprehension and retention of prose reading materials, and that they can be generalized to learning from the reading of textbooks. It is hoped that the analysis of the data gathered for this study can be added to the existing body of knowledge about how best to aid learners in comprehending printed materials.

Statement of the Problem

The purpose of this study was to determine if certain focus-type materials were helpful in alleviating the comprehension problem mentioned above. Specifically, the purpose was to determine if an "organizer" improved the understanding and retention of what was read; and if so, to determine if the placement of the organizer significantly affected the resulting performance. Also, the variables of prior reading ability and intelligence were examined to see if an interaction existed between them and placement of the organizer.

Definition of Terms

The following definitions seem important to this study:

1. Comprehension: There is considerable argument among reading specialists as to the exact nature of comprehension. To avoid

unnecessary debate, it is used here to mean the ability of a reader to recognize or select specific information from a prose passage (direct recall of fact), to infer meanings from what is read, and to draw generalizations from the reading as measured by a multiple-choice test developed for this experiment.

2. Intelligence: According to Schneiders (1956) "... disagreement and confusion regarding ... intelligence [is] common among lay persons, and ... a similar confusion exists among educators." In this study it is defined as the ability to think as measured by the Ohio State University Psychological Test (1965).

3. Prior reading ability: This term is used to describe the subjects' performances on a standardized reading achievement test, the Nelson-Denny Reading Test, Form A, (1960), administered prior to carrying out this study.

4. Organizer: This refers to a 125 word paragraph which consists of "ideational material which is at a high level of abstraction, generality and inclusiveness rather than constituting a simple summary." (Ausubel and Fitzgerald, 1960). Its purpose is to provide the reader with a generalized overview of the reading material, and to provide focus on conceptual relationships.

Research Hypotheses

The actual study resulted in the statistical treatment of ten research hypotheses which were derived from the following questions:

Among community college freshmen, does the use of an organizer facilitate the comprehension of prose reading materials, does placement of the organizer affect comprehension, and in what ways are the factors of intelligence and prior reading ability related to the use of an organizer and reading comprehension?

Procedure

To select a sample for this study, all full-time (12 credit hours or more) freshmen students at Florissant Valley Community College in St. Louis, Missouri, were considered. By matching student identification numbers with a table of random numbers, it was possible to select 160 subjects from the population of 1,684 full-time freshmen to participate in the experiment.

Admissions folders for the selected group were examined for two types of data which were required of all entering students. These were a percentile rank score on the Ohio State University Psychological Test, a test of thinking ability according to the

test manual, and a percentile rank score on the Nelson-Denny Reading Test, Form A, a test of reading achievement.

After the sample was drawn and the intelligence and reading scores were recorded, the subjects were asked to report to a large room on the campus for testing. When the subjects arrived, they were allowed to sit anywhere they chose within a ten row area to allow for further random distribution. Materials were arranged so that they could be passed to subjects in order (I, II, III, IV, then I, II, III, and so on) until all materials were in place. Those numbered I had the organizer first, then a reading passage; number II had the reading passage first, then the organizer; number III had the organizer first, then the reading passage, then the organizer again; number IV had only the reading passage. (See Table 1) These procedures were followed to assure random assignment to treatment groups, as each subject could sit anywhere he chose, theoretically allowing him the possibility of being in any of the four groups.

No time limit was imposed; when students finished reading, they signaled a proctor (there was one for each two rows), turned in their reading materials, and received a twenty question comprehension test which tested immediate recall of facts, main ideas, and inferences. All subjects had the same reading

passage and test; the only treatment difference was in the use and placement of the organizer.

Table 1

Arrangement of Experimental Materials

Group I	Group II	Group III	Group IV
Organizer + Reading Passage	Reading Passage + Organizer	Organizer + Reading Passage + Organizer	Reading Passage
Group N = 40			

The reading selection used as the basis for the comprehension test was adapted from a psychology test by Cronbach (1963) and dealt with neural maturation. It was chosen because the examiner felt that subjects reading it would have little or no prior experience in reading that type of material. The selection totaled 1,028 words, and proved to be of the appropriate level of reading difficulty as measured by two readability formulas. The Dale-Chall Readability Formula (1948) indicated that the passage fell into the college-level difficulty range, between grades thirteen and fifteen. A second formula, the SMOG (1969), indicated a grade level difficulty of 13.5. This

level of difficulty was in close proximity to the actual grade placement of the subjects at the time of testing (13.3).

The comprehension test, which was the same for all subjects, was composed of twenty multiple choice questions drawn from the reading passage. Reliability was estimated by using a "split-halves" procedure, with a reliability score of about .70 resulting. No items on the test could be answered directly from the organizer, indicating that the higher scores by groups with the organizer were caused by something other than possible answers found in the organizer.

One further note should be made. All materials used in this experiment looked alike, so that subjects were unaware that their materials were not exactly the same as all others. There were no problems in the administration of the materials, and all subjects had finished in 39 minutes or less.

Results

The data gathered from this study, which included a reading achievement test score, an intelligence test score, a comprehension test score, and treatment group membership information, was analyzed by a computer, using the multiple regression analysis technique. All hypotheses were tested at the .05 level of significance, with these results being found:

1. Use of the organizer, regardless of its placement in relation to the reading passage, resulted in significantly higher comprehension test scores than the scores of the control group which had no organizer. (See Table 2)

2. The pre-organizer group and the pre- and post-organizer group were not significantly different in terms of the comprehension test score.

3. The post-organizer group had significantly higher scores than either the pre-organizer group or the pre- and post-organizer group.

4. There was no linear or curvilinear interaction between placement of the organizer and prior reading ability or intelligence. (See Table 3)

Discussion

Based on the findings, it appears that use of an organizer of the type employed in this study and described by Ausubel would be beneficial to community college readers in terms of increased comprehension of prose reading materials. The focus effect of the organizer is apparently an important factor in the type of comprehension test commonly employed in community college courses.

The placement of the organizer also appears to be an

Table 2

A Summary of the Results of Research Hypotheses Investigating Use and Placement of Organizers in Reading Comprehension

	R^2 of Full Model	R^2 of Restricted Model	Degrees of Freedom: Numerator	Degrees of Freedom: Denominator	F	Probability
1a: Pre-organizer greater than no organizer	.03	.00	1	158	4.90	.0141 *
1b: Post-organizer greater than no organizer	.07	.00	1	158	11.42	.00045*
1c: Pre- and post-organizer greater than no organizer	.07	.00	1	158	11.54	.00043*
2: Post-organizer greater than pre-organizer	.08	.00	1	158	13.63	.00015*
3a: Pre- and post-organizer greater than post-organizer	.06	.00	1	158	10.07	.999
3b: Pre- and post-organizer greater than pre-organizer	.02	.00	1	158	2.60	.946

* Indicates Statistically Significant Results

N = 160

Table 3

A Summary of the Results of Research Hypotheses Investigating Use and Placement of Organizers in Reading Comprehension

Hypothesis	R^2 of Full Model	R^2 of Restricted Model	Degrees of Freedom: Numerator	Degrees of Freedom: Denominator	F	Probability
4: Linear interaction; organizer and intelligence	.476	.473	3	152	.220	.884
5: 2nd degree curvilinear interaction; organizer and intelligence	.486	.474	6	148	.545	.773
6: Linear interaction; organizer and prior reading ability	.457	.451	3	152	.510	.670
7: 2nd degree curvilinear interaction; organizer and prior reading ability	.460	.452	6	148	.384	.888

N = 160

important consideration. The findings indicate that placing the organizer after the reading passage tends to result in greater comprehension than any other placement examined.

No prior research was found which suggested the possibility of interaction between placement of the organizer and either intelligence or prior reading ability. However, this researcher felt that if a post-organizer proved beneficial to subjects with poor prior reading ability or lower intelligence, the benefits might be increasingly greater as abilities increased. As it turned out, no such relationship was found, indicating that use of a post-organizer would be beneficial for all readers such as those examined, regardless of their prior reading ability or intelligence.

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